East Engin.
Library
UG
633
.A43

DEC 20 1937

Air Corps News Letter

Seasons Greetings

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT WASHINGTON, D. C.

DECEMBER 15, 1937.

VOL. XX. NO. 24.

VOL. XX AIR CORPS NEWS LETTER NO. 24.

Information Division, Air Corps — December 15, 1937 — Munitions Building, Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

---oOo---

A YEAR END MESSAGE FROM THE CHIEF OF THE AIR CORPS

The season of the year which is now upon us is an opportune one to reflect upon those things which we may well count our blessings. Looking to the many places in the world where wars are now raging or imminent we in the United States can be especially thankful that our country is at peace with all the nations of the world.

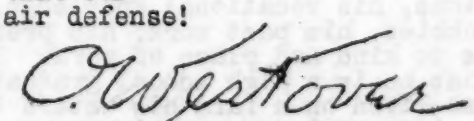
We in the Army Air Corps can be thankful for a year spent in productive activity, the total result of which has done much to promote and insure that peace. As we look back over the last twelve months of our activity and endeavor, we find the year 1937 to have been one of the bright years for the Army's flying arm and, for that matter, for aviation - military and civil - the world over.

Our success in the flying arm has been due, in no small degree, to the strong support of the War Department and the Army, as a whole, and to the close cooperation of other branches of the service. We have also been supported strongly and aided freely by many other agencies and establishments of the Federal Government, all of which we acknowledge with gratitude.

We have problems, true; we have difficulties yet to be overcome, but we know what those problems and difficulties are and we have made plans to meet them. We have not sat slovenly and sluggishly by and done nothing about those phases of air development and organization which required attention. We have not been unmindful of the fact that many foreign countries have, during the past year, made giant strides in an effort to develop air forces inferior to none in the world. We have realized that our problem in the Army Air Corps has been two-fold: first, to keep abreast of aeronautical research, experimentation and development, to insure that our Army airplanes, type for type, are at least the equal of those found elsewhere in the hands of any possible adversary. We have accomplished that result. I can state emphatically that that is not only true, but that some of our types are superior to those available anywhere else in the world. We know that our ability honestly to make that remarkable statement is due to the funds and energies we have spent on aeronautical experimentation, but we realize that several other countries have, during the past year, placed an uncommon emphasis on experimentation and, in some cases, probably are now spending more money than we in this country on this subject. That means that their airplanes three to five years from now will be superior to ours, unless we increase our funds for experimentation, research and development. We shall leave nothing undone in our effort to accomplish that result. The other score on which our energies have been exerted is on organization and training of those units and that personnel which we have had available in the Army Air Corps during the year. Our GHQ Air Force has ably superintended, supervised and controlled that training program to the end that I feel the Army can justly say there is no other air force in existence which exceeds it in training, in individual and unit efficiency. There may be larger ones, but none is better. Size for size it compares more than favorably with the best.

Our present respected and enviable position in the world in the air, so far as military flying is concerned, is directly due to the earnest and sincere efforts and untiring energies of our officers and men of the Corps. I wish to thank each of you for your individual efforts which have borne the collective result I have just outlined, and wish for each of you and your families a Happy Holiday and successful New Year 1938.

May we all continue our earnest and concerted effort with the result that our country may be afforded ample air defense!



Major General, Air Corps,
Chief of the Air Corps.

V-7578, A.C.

THE NATION'S LARGEST EMPLOYER AND ITS "LABOR BOARD"
By the Hamilton Field Correspondent

The United States, as the largest employer of men in this country, has demonstrated that there need be no such thing as a labor problem.

Every day new men enter military life - men as different as night and day - men of all temperaments, trades, ages and training; men from all States and nearly every county in every State; poor men, rich men. Yet these men quietly and unobtrusively, without fuss or flurry, are assimilated, trained, and take their place as units of the national defense.

In the Air Corps especially has the personnel problem been acute. From vastly varied sources come recruits who must within a few months' time assume positions of great responsibility. On their technical knowledge and training in any one of hundreds of aeronautical crafts depends the safekeeping of valuable military aeronautical equipment and the lives of those who defend our nation in the air.

Upon the organization of the GHQ Air Force, the personnel problem reached its zenith. In order to place each soldier in the one spot he is most fitted by trade, temperament, and desire, Major General Frank M. Andrews, Commanding General of the GHQ Air Force, initiated a system of personnel classification.

Under this personnel plan, each man entering the Army is examined thoroughly as to his previous training, his mental aptitude, and his personal desires, by a board of officers situated at each air base of the GHQ Air Force. Upon the classification of this Board depends the future assignment and type of work done by each soldier entering the Air Corps.

The system works like this:

"Bob" Brown has just enlisted for the Air Corps at Hamilton Field at his home (let us say Portland, Oregon). Brown has been outfitted as a soldier at Portland and given transportation to Hamilton Field. On arrival at this air base, Brown is first of all interviewed by Major Edward D. Jones, Air Corps, S-1 and Chief of Personnel at Hamilton Field. In this interview, Major Jones secures as far as possible every scrap of information concerning the recruit which would be of advantage either to the soldier or to the Government to know. He learns about his educational qualifications, his vocational knowledge, his hobbies, his past work, his preference as to kind and place of work. Brown says that he is a high school graduate. He has lived on a farm his entire life and he is very interested in trucks and automobiles. He has never done any professional work on gasoline engines but he has always "tinkered" with them on his father's farm. Brown then goes to the garage, where he is given the opportunity to tear down and repair one of the seventy odd trucks, tractors, cars and motorcycles which are used at Hamilton Field. This test determines whether or not Brown has any aptitude for such work and, if so, whether or not he needs further training. The interview and results of the trade test are then placed before the personnel classification committee, composed of specialists in each of the many trades followed at Hamilton Field. The member of the committee who is a specialist in automotive repair then reports whether or not Brown is suitable for assignment to the garage. If he is not suitable, Brown is then tested in another trade of his preference. If he is suitable, Brown is assigned permanently to the garage where he either assumes the responsibility of a trained mechanic or undergoes a thorough apprenticeship at the hands of instructors, according to his ability.

The classification board then has achieved three very tangible results with Bob Brown,- first, it has made the most desirable use of his services so that the government gets value received for his wages; second, competent hands have been chosen to work upon valuable Government property and thus safeguard the taxpayers' investment; third, Bob Brown has been placed in a position that he especially likes and one which, through his interest, will furnish him a valuable and worthwhile trade after his enlistment in the Army.

True, this is far from being Brown's sole assignment to duty. He has other things to learn - strictly military subjects. He, as well as every other man entering the Army, must undergo an intensive period of recruit training in which he learns drill, military hygiene, and similar subjects necessary for his well being, but Brown, placed in a particularly interesting position as his main duty, is a satisfied, efficient workman.

---oOo---

Western Air Express set a new passenger record over their San Diego-Salt Lake route last September with the flying of nearly one million passenger miles, a total of 3,500 passengers being carried over its system from Great Falls to San Diego. Nearly 65,000 pounds of mail were flown, a twenty percent increase over the corresponding month in the year 1936. Over twenty tons of air express were carried.

"YOU CAN'T PARADE THEM LIKE SOLDIERS"
By a Power Plant Engineer

High output engines have sounded the death knell of the would-be Napoleons on big white horses who like to watch the boys go by in fancy parade on the ground.

Those of us who lean toward the academic side of the situation know that B.M.E.P.'s (brake mean effective pressures) have practically doubled since the good old days. All the technical ingenuity of man has been gathered together to guide every available molecule of air around through the fins of our air-cooled engines. Even under the most favorable conditions, heat transfer from the engine to the air is scarcely adequate.

On the ground all of these troubles are magnified many times. In fact, some of the better informed authorities claim that we are wearing our engines out on the ground and not in the air. Included in this category is our old mechanic, brought up on O.X.'s and Liberties, who must park his ship on the line and let it buzz for one-half hour each morning. "If the airplane and engine were working all right the evening before, why the half hour to find out the same thing the following morning?" he asks.

Cowl design and prop wash cause some fancy airflows, particularly in air-cooled engines when operated at less than flying speed. Such variations may prove to be anything from reverse flow to practically no flow at all through the fins and the cylinders.

With reference to our new high output liquid-cooled engines, a similar condition prevails. Radiator and oil cooler airflow depend, for adequate cooling, entirely upon the high air speed of the airplane. To obtain high performance we must produce low drag, etc. Any type of large air scoops which will be adequate for cooling while parading airplanes on the ground, or during mechanic's warm-up, means a tremendous sacrifice of speed in the air. These details will be self-evident to the tactical pilot upon his first contact with the newer airplanes now leaving the industry. From the standpoint of airplane and engine efficiency, all pilots should develop the habit of getting comfortably settled in the cockpit and being ready for take-off shortly after starting the engine. If the engine is running on the ground, remember - every minute of fidgeting in the cockpit costs money.

Advice for take-off formation from the materiel standpoint is - get in your airplane, get comfortable, start your engine, taxi out, and get going, or you may not get over the fence at the end of the field.

---oOo---

FAST TRAVELING FOR B-17's

Three B-17 Bombardment airplanes, commanded by Major H.L. George, with wing ships being flown by Captains H.M. Wittkop and D.H. Alkire, departed on November 14th from Langley Field, Va., enroute to March Field, Calif., the southern route to Maxwell Field, Ala., and then a Mercator course of 273 degrees to destination being followed. The weather was excellent, but head winds of gale velocity reduced the ground speed at times to 125 m.p.h.

Radio communication with the 2nd Wing was maintained for approximately 1900 miles, and with the 3rd Wing for about 1,000 miles.

No excessive fatigue was experienced by the crew, but the altitude of 12,000 feet over such a protracted period necessitated the use of oxygen. The take-off from Langley Field was at 21:00 EST on November 14th, and the landing at March Field was at 12:00 EST, November 15th.

The return trip to Langley Field was made via Randolph Field, Texas, and proved rather uneventful. The elapsed time between March Field and Randolph Field was 4 hours and 45 minutes, while that between Randolph and Langley Fields was 8 hours and 30 minutes.

FIELD TRAINING FOR 4th OBS. SQUADRON

The 4th Observation Squadron, stationed at Luke Field, T.H., recently returned to its home station after spending a week in field training at South Cape, Hawaii. Although handicapped by high winds, an excellent camp was established and a great deal of useful field training was accomplished. The entire personnel and equipment was transported by air, which in itself served as an important training item. Twelve officers and thirty-one enlisted men made the trip.

The Black Widow Spider population, previously reported upon in the News Letter, seems to have decreased slightly, and the News Letter Correspondent expresses the hope that this decrease may be attributed to the toads which were imported about a month ago in the belief that the spiders would appeal to them as an article of diet.

---oOo---

It is the purpose and desire to publish in the News Letter items of interest covering activities at all Air Corps fields and stations. Contributions will be welcomed from Randolph, Brooks, Wheeler and Albrook Fields from which no news has been received for some time.

V-7578, A.C.

ACTIVITIES OF THE 97TH OBSERVATION SQUADRON
By the Mitchel Field Correspondent

The 97th Observation Squadron (Corps and Army), Air Corps, at Mitchel Field, N.Y., seems to be school-wise these days. Everywhere we turn in this outfit we find some form or evidence of squadron or individual schooling instinct, and it is satisfying to note this, particularly when so much is being published on modern GHQ aviation - readiness for combat, keenness, military efficiency, etc.

The 97th Observation Squadron (Corps and Army) is, in fact, an M-Day Force. It is now a 130-man outfit. This increase was recommended by Major George C. McDonald, Air Corps, former squadron commander and now a student at the Command and General Staff School, and has been kept active by the present skipper, Major Charles A. Horn, Air Corps.

The first step in this direction was the appointment of officers to combat crews and the establishment of flights, with regularly assigned pilots, observers, mechanics, radio operators, photographers, etc. This system has been used daily for the past year, and its practicability most definitely indicated by the Squadron's outstanding success during the summer season of 1937, when one or more airplanes have been detached from the Squadron, operating in the field in cooperation with all types of ground arms, away from home airdrome for periods of as much as three weeks. On these missions the duties performed and field conditions encountered were very much similar to those which it is anticipated would exist under actual service conditions.

The second move was the formation of an actively functioning squadron intelligence section. Believing this a most necessary section for any Air Corps organization, and particularly so for an observation unit in times of peace or war, the present squadron commander designated 1st Lieut. Richard H. Wise, Air Corps, as Squadron Intelligence Officer, with two Reserve officers as assistants - 2nd Lieuts. Alfred G. Witter and Sterling G. Harvey. These officers have been instructed in the primary functions and channels of an Army Intelligence System, its close relation with Operations Plans and Training, and some emphasis placed on the prompt rendition of complete and accurate observers' reports, care in taking aerial photographs, methods of successful cooperation with various ground arms, etc.

Since the beginning of the present fiscal year, this Squadron has been conducting ground schools and "rainy day" schedules for both officers and men. The officers' courses include Ground and Air Rules; Airplane and Engine Maintenance; Communications; Armament; Instruments; Photography; Meteorology; Air Navigation; Chemical Warfare, and Technical Administration. This instruction will be continuous throughout the training year. All enlisted men are schooled in subjects relating to their particular departments, and have recently undergone unofficial rigorous practical examinations in preparation for the forthcoming annual Air Mechanic examinations.

The Squadron has been sending its regular quota of enlisted men to the various courses conducted at Chanute Field in the Air Corps Technical School, and has a long waiting list for this activity. The latest orders include: Armament, Pvt. 1st Cl. John D. Pardee; Photography, Pvt. Herbert A.E. Ruhrman, and Radio Communications, Pvt. 1st Cl. Carmen R. Gismondi. In addition, there are two men now attending the base radio flight operator's course. Two officers of this organization were sent to that school within the past six months, and another detailed to study weather at the California Institute of Technology. A previous squadron commander is now attending the Command and General Staff School, and the present "Skipper" is under orders for the same course, beginning in the Fall of 1938.

In addition to these activities, it has been noticed that a number of the enlisted men are spending a great deal of spare time and a few spare nickels in the night schools of nearby Jamaica and Brooklyn. Others are pursuing various correspondence courses for theoretical technical training, and at least three are now enrolled in the 2nd Corps Area Army Extension Schools with a view to ultimate commissions in the Officers' Reserve Corps.

All this is taking place to the end that the 97th may properly and successfully fulfill its primary mission: "To observe, record and report with deadly effect."

---oOo---

33RD PURSUIT IN INTERCEPTION PROBLEMS

Some of the most interesting work at Langley Field at the 33rd Pursuit Squadron front is the interception problem. The Squadron usually assigns two or three officers to run the plotting board and the Flight Commander takes over the flying end. Zig-zagging courses of the "enemy" formation keeps the friendly Pursuiters on their toes and calls for accurate timing and exact navigation. Each mission usually results one hundred percent successful.

The mornings receive their debut with flight gunnery on tow targets at an altitude of 15,000 feet.

---oOo---

HARMONIZATION FOR HIGHER SCORES

By 1st Lieut. Norman H. Ives, Air Corps

THE efficiency with which a Pursuit airplane can carry out its defensive or offensive mission is dependent mainly upon the operation and effective use of the fixed machine guns. Disregarding the mechanical and electrical difficulties encountered in gunnery, and assuming that the rate of fire synchronization, etc., are satisfactory, there is one major consideration which may mean the difference between highly successful accomplishment of a mission and failure: that vital factor may be best described as the ability of the pilot to hit the target.

Inasmuch as the ability of the pilot to hit the target does not depend solely on the individual's flying ability or the functioning of the armament equipment, it is important that all of the contributing factors be considered. Low scores are generally attributed to rough air, poor flying qualities of the airplane, erratic piloting, or just poor marksmanship. Actually, about eighty percent of the trouble may be traced very definitely to one cause: improper harmonization.

Merely mounting sights and guns on an airplane in such positions as will cause the trajectories of the bullets to intersect the line of sight at a given range is not sufficient harmonization to insure hitting the target consistently. Unless the pilot can hold the sights on the target long enough to fire an accurate, destructive burst, the results are erratic and considerably below the desired standards of gunnery efficiency.

The most important factor in harmonization, and the point that is most frequently overlooked, misunderstood or unknown, is this: It is impossible for a pilot to fly a straight, true course to the target, holding the sights on the target long enough to insure accurate, destructive fire, unless the sights are perfectly parallel with the flight line of the airplane.

As stated above, the necessarily steady, accurate approach does not depend solely on the flying ability or finesse of the pilot. The steadiest pilot cannot hold his sights on the target and fly a straight line if those sights indicate a line which the airplane cannot possibly make good, because of the design, rigging, or inherent flying qualities of the airplane.

Mounting the sights parallel with the flight line does not mean that the sights are parallel with the longitudinal axis of the airplane. The longitudinal axis and the flight line are seldom the same. The longitudinal axis remains constant, whereas the flight line of an airplane varies, in relation to the longitudinal axis, with an increase or decrease of speed, altitude and load. Therefore, it is necessary to select an airspeed and altitude, find the exact angle between the flight line and the leveling lugs of that airplane for the desired airspeed and altitude, and then align the sights accordingly.

The correct angle between the flight line and the leveling lugs for any airplane equipped with fixed machine guns may be obtained from the gun sighting chart prepared by the manufacturer and included in the airplane handbook.

The gun sighting charts are plotted to show the angle between the flight line, with full useful load less one-half the fuel load for all speeds within stalling and fifty percent greater than maximum level flight speed, and the line established by the leveling brackets or leveling datum for each 5,000 foot altitude. For example, a typical gun-sighting chart will show that at an airspeed of 150 miles per hour, at sea-level, the flight line will be three degrees above the line parallel to the leveling lugs. That is, the nose of the airplane will be three degrees above the line the airplane is actually flying. At a speed of 280 miles per hour, at the same altitude, the flight line of that airplane will be slightly below the line parallel to the leveling lugs. If the sights are aligned with the leveling lugs, it is easy to see that it is impossible to fly parallel to the line of sight except at the one speed and altitude at which the flight line and the longitudinal axis are the same.

If the line of sight and the flight line are not absolutely parallel, the pilot may get the sights on the target but cannot possibly hold them on the target because the airplane follows a line which may be several degrees above or below the line of sight. As the airplane approaches the target, the sights move up or down on the target, although the pilot does not vary the angle of approach. In order to return the sights to the target, the pilot must change the vertical angle of approach of the airplane. The new angle will permit the sights to remain on the target momentarily and then the angle must be again corrected to return the sights to the target. This results in a "dive and zoom" approach. Theoretically, the approach described is approximately the shape of a parabola. Actually, due to the pilot's efforts to make the corrections necessary to keep the sights on the target, the airplane "hunts" up and

down on the parabolic course. The "dive and zoom," of course, is very shallow and hardly perceptible to onlookers and usually not of sufficient magnitude to be noticed by the pilot. However, that irregular approach is enough to account for the difference between expert gunnery and just average or poor marksmanship. A change of one degree in the angle of approach, at a range of 700 feet, will move the center of impact more than twelve feet.

It must also be remembered that in mounting the sights parallel with the flight line there must be no lateral divergence. This does not mean, for instance, that all C-4 sights will read "0". If the fuselage remained perfectly true, and the sight post mounting sockets were accurately aligned, then the sight would always read "0". Adjustments to right or left are usually necessary to bring the line of sight parallel with the flight line. By attaching strings of equal length (about 30 feet long) to the leading edges of the right and left wings, equal distances out from the center of the fuselage, and by bringing the free ends together in front of the airplane at the level of the sights, an accurate sighting point is provided for aligning the sights, laterally, parallel to the flight line. If the point at which the strings meet cannot be seen through the sights with the rear sight set at "0", then an adjustment is necessary. After accurately aligning the sights parallel to the flight line by the above method, the sight should never be moved from the flight line in order to intersect the line of fire at a given range or to move the point of impact in relation to the center of the target. Move the guns,- not the sight. The position of the guns cannot in any way affect the flying of the airplane. It is absolutely necessary that the strings used in establishing the point directly in front of the airplane be exactly the same length. Care must be exercised to prevent stretching one string more than the other, or an appreciable error may result.

The same principles and factors involved in harmonizing and using the C-4 sight apply to the N-2 optical sight. The actual procedure in aligning the N-2 sight varies slightly, but the results are the same, and it is just as important accurately to mount the sight so that the line of sight is perfectly parallel with the flight line of the airplane. If the sights and guns on all the airplanes in a squadron are harmonized properly, it will make no difference in a pilot's scores whether he flies his particular assigned airplane or some other airplane in the squadron. As long as the correct airspeed and altitude are maintained, a steady, true course can be flown, and the sights can be held on the target with comparative ease. In many Pursuit squadrons it is necessary for two or more pilots to use the same airplane for gunnery. If each pilot aligns the sights and guns in accordance with his own understanding of harmonization, the result will be an unnecessary waste of time and, in most cases, average or poor scores. Furthermore, unless the sights on all airplanes in an element or flight are correctly aligned parallel with the flight line, a close element or flight formation cannot be maintained while approaching and firing on a target. For instance, if the rear sight on the leading airplane is off-set to the left, that airplane will describe an approximate parabola to the right as long as the pilot sights on the target. If the rear sight on the airplane in number two position is off-set to the right, then that airplane will follow a parabolic curve to the left during the approach if the pilot attempts to hold the sights on the target. The result is that the wing men in a formation are forced to disregard their sights and fly for position on the leader. This accounts, to a great extent, for the inaccuracy of formation fire. The advantages of standardized, correct harmonization are obvious.

The question of whether to align the sights or the guns parallel with the flight line is still frequently discussed and argued among pilots. There are quite a few erroneously informed pilots who insist on moving the sight to harmonize with the guns and to change the center of impact on the target. Those are the pilots who complain about the flying qualities of the airplane, and find it necessary to develop bad habits of skidding or slipping in order to hold the sights on the target.

Any doubt regarding the sligning of the sights and guns in relation to the flight line may be easily and quickly dispelled by the following practical demonstration: Using an automobile or any vehicle to simulate an airplane, mount a C-4 sight parallel with the longitudinal axis and sight on an object about 100 yards distant. (If it is not practicable to mount a sight on the vehicle, a chalk line on the hood, the center hinge, or a mark on the windshield in line with the radiator ornament will suffice. Require the "pilot" to drive the car slowly to the "target," holding the sight steadily on the selected object. If the sight is absolutely parallel with the longitudinal axis of the vehicle, the resultant course to the "target" will be perfectly straight. If the wheel tracks or tire marks are not visible, the line of approach may be shown by fastening a stick or wire on the vehicle in such a manner that it will scratch or mark the surface over which the vehicle passes. Next, move the sight, line, or windshield marker so that the line of sight is at a

slight angle to either side of the longitudinal axis of the vehicle and repeat the run. The "pilot" will be unable to hold the sight on the target without gradually swinging the vehicle to right or left. The approach, as marked or shown on the surface, will be a parabolic curve.

The above demonstration should prove conclusively that the line of sight and the flight line must be the same in order to hold the sights on a target and make a straight approach. Although this demonstration shows only the erratic approach due to lateral divergence of the sight from the flight line, it must be remembered that exactly the same principles and factors are involved in vertical divergence. Add the vertical and the lateral curves together and the answer is erratic, mediocre gunnery. Pilots cannot expect to make consistently high scores if their airplanes cannot be made to fly a steady, straight course to the target. Correct, careful harmonization will enable average aerial gunners to raise their scores considerably, and the experts will get more consistent results.

---oOo---

NEW LARGE TOW TARGET

The development of a tow target, the effective area of which is 300 square feet - much larger than the Types A-5 or B-12 - has practically been completed at the Air Corps Materiel Division, Wright Field, Ohio. This type of target embodies a series of short sleeves with mouths radially mounted at the rear of a flat flag and arranged so that the target may be towed either in a horizontal or a vertical plane. Because of the greater area of this target, scores for more accurate firing data may be obtained and visibility at longer range is afforded.

For the purpose of determining whether or not this design was suited for aerial gunnery practice, the target was taken to Selfridge Field, Mt. Clemens, Mich., on November 2nd. Six practice flights by 1st Pursuit Group pilots over a two-hour towing period were accomplished and proved that the design with minor modifications would be entirely satisfactory. For use in connection with the target, a Type C-5 windlass of 7,000 ft. cable capacity was developed. This windlass is similar to the Type C-4 except that it is made larger to accommodate approximately twice the length of cable. An air-cooled brake drum and an integral electric motor for rewind of the cable have been incorporated to replace the impeller drive used on other windlasses.

Action has been initiated to procure four of these windlasses and a number of the new type targets for service test.

MONUMENT DEDICATED TO WAR-TIME FLYER

In the presence of approximately 1,000 statesmen, diplomats, government officials, Army and Navy officers, veterans, relatives and friends, a monument to the memory of Lieut. Norman Prince, World War flyer and organizer of the famous Lafayette Escadrille, was dedicated on Monday, December 6th, at the Washington Cathedral, Washington, D.C.

Fifteen members of the Norman Prince Post of the Veterans of Foreign Wars and an equal number of members of the Norman Prince Post of the American Legion came from Boston to constitute a guard of honor around the monument. Mayor Frederick W. Mansfield, of Boston, and Mrs. Mansfield, likewise attended, offering a wreath in tribute, in the name of their city, to "one who was her son."

The counselor of the French Embassy, Mr. Jules Henry, represented his country at the ceremonies in the absence from the city of the French Ambassador.

"It is a significant circumstance," said the Right Rev. James E. Freeman, Bishop of Washington, who conducted the rites, "that the first notable monument and memorial to be placed here is in honor of an American youth who made the supreme sacrifice not under his own colors but under the tricolor of France. He was a volunteer who died for a cause he loved."

General John J. Pershing, representing the armies of the United States, also praised Lieut. Prince as a chivalrous hero who gave up wealth and ease for martyrdom in the name of righteousness. The A.E.F. Commander was followed by Major General Adelbert de Chambrun, representative of the armies of France, who told of the hero's career as an organizer of the Lafayette Escadrille and declared that his name, held in grateful remembrance by the people of two nations, will be a "sentiment that always will keep us united."

Army Air Corps officers present at the ceremonies were Colonels Chalmers G. Hall, Frank P. Lahm, Lieut. Colonels Michael F. Davis, Arthur E. Easterbrook, and Major George L. Usher.

---oOo---

A Pako Model G-37 photographic print dryer was recently delivered to the Materiel Division, Wright Field, from the Pako Corporation, Minneapolis, Minn. This dryer was procured for comparative tests with existing drying equipment, with the idea that it would lend itself to modifications and be suitable for use in the portable photographic laboratory. It has a capacity of approximately 300 8 by 10-inch prints per hour. The drying is accomplished by gas, and the prints are carried over the heated chamber by fabric belts.

AIR CORPS DEVELOPS HOMING INSTINCTS
By the Hamilton Field Correspondent

Each year Hamilton Field initiates a school in navigation with the intention of going the homing pigeon one better - that is, to go to a distant place as well as to return to the home port. At the beginning of the California winter when even the ducks ride the waves, all pilot personnel not already qualified in air navigation go to their classes to find out in practice why Columbus sailed west when he wanted to get east.

The course covers a period of sixty hours and includes the theory of dead reckoning and celestial navigation and actual air navigation problems. The first twenty hours are devoted to definitions, instruments, and map study. The four main map projections, Mercator, Gnomonic, Polyconic, and Lamber Conformal are analyzed and the advantage of each emphasized and sample charts of each type are constructed in the classroom. Each embryo navigator acquires complete familiarity with all navigation instruments and is required to calibrate each type.

Air speed calibration is accomplished by timing the flight between two points of known distance and checking the meter reading with the actual speed. Compasses are either swung on the ground over a large compass-base or by heading into the sun, and by determining the angle of the sun's shadow for that instant it is possible, with the aid of the modern developed gyroscope, to calibrate from any known direction to 180 degrees from that position.

Drift sights are calibrated with the aid of a surveyor's transit and plumb bobs. All this is accomplished so the modern airplane navigator can correct for instrument installation errors which are always present in any graduated recorder.

Dead reckoning navigation is the most commonly used method for keeping a log of where one is or will be, and is used by all vessels at sea during continued fogs and bad weather. This is the only system available, and many a ship's log will show positions at the end of a day as a Dead Reckoning position. It is simply using Speed times time elapsed to give distance and correcting this for wind and instrument errors. With present types of navigation instruments two readings of the amount of drifts of different directions will give the wind force and direction and the actual ground speed even though the airplane is two or three miles above the earth.

On completion of the preliminary forty hours of school in Dead Reckoning navigation, all students are required to navigate a number of missions over water where there are no known points to aid in determining where they are. Such missions are planned beyond the sight of land and the navigator's accuracy is computed by the arrival point on the coast.

As soon as a navigator can plot his position within one mile in a hundred miles and estimate his arrival at a point within one minute for each hour out, he is sufficiently familiar with air navigation to begin the problems confronting the Air Corps of patrolling and defending the coast.

As all the large vessels at sea send in weather reports every twelve hours with their positions, it is possible to use them as objectives in interception problems. This form of navigation requires the most accuracy and affords the very best type of training. Many an ocean traveler a day away from San Francisco could look up at a solitary Army airplane swooping down on the ship from the blue and have the comfortable feeling that he is nearing a safe and dependable port.

Celestial bodies, when visible, are available as another aid for the air navigator and can be made use of to determine one's exact position day or night by computation of their height and angle.

The most modern navigation aid, the radio direction finder, which, if developed to operate under severe electrical conditions, will greatly simplify navigation methods and insure accurate air navigation even in cloudy weather, when reference to celestial bodies for rectifying position is impossible.

---oOo---

BT-9 AIRPLANES FOR LANGLEY FIELD

Four North American BT-9 airplanes were recently ferried to Langley Field, Va., from the factory at Inglewood, Calif. A small two-place, low wing monoplane with sliding covers over the cockpits, the BT-9 will fill a new need in the Second Bombardment Group, to which three have been assigned. They will be used as "couriers" - messenger and utility airplanes - for those numerous missions wherein the employment of the large Bombardment planes would not be economical. The fourth BT-9 will be assigned to the Eighth Pursuit Group, also as a "courier."

---oOo---

The first of a series of nine high altitude type Douglas DC-3's was recently delivered to Pan American Airways at the Brownsville, Texas, base. The plane will form the primary step to getting into the sub-stratosphere, the final step being made with the 21-ton "Sub-stratosphere Liners" now being built for the line by the Boeing Company.

V-7578, A.C.,

AND I LEARNED ABOUT FLYING FROM THAT

In accordance with repeated requests in the News Letter for Army pilots to submit for publication unusual incidents connected with flying, from which certain lessons were learned and the narration of which would prove helpful to other pilots, an Air Corps pilot submitted a report of two such incidents which occurred several weeks ago, and which are given below, as follows:

After landing at Chanute Field following a cross-country flight from Offutt Field in an A-17A, I found that my brakes were locked. The plane slid along on the turf as if it were going to crack up, but it finally stopped right side up. I tried to taxi, but was unable to move. I then pressed the rudder pedals and heard the parking brake release. After that I taxied without difficulty. Inasmuch as I did not take off with the parking brakes lock on and distinctly remembered having released it, I believe that the fact that I spent ten minutes blind in one of the most violent storms which I have ever experienced - literally being shaken almost to pieces - must have put the parking brakes on in some unexplained manner.

Corroborating this is the fact that the flap lever, although up when I took off, was down, and when I put my landing gear down the flaps went down. I never lower the flaps with power, but utilize the hand control. I had an indicated speed of about 170 miles when I put the wheels down. The flaps instantly went down full, and why they did not rip off is more than I can understand.

On a flight from Washington to Chanute Field in a B-18, the hydraulic pressure gauge blew out, rendering inoperative the automatic pilot, the landing gear, the flaps and the brakes. Two-thirds of the oil leaked out of the hydraulic tank, still leaving me enough to put the landing gear down with the emergency hand pump. I landed the ship at Chanute Field without difficulty, without brakes or flaps.

The following conclusions are reached:

(1) The minute I noticed the pressure going down in the hydraulic system I should have put my wheels down. Possibly I could still have gotten them down with the remaining pressure, thus leaving one-third of the oil for use on flaps and brakes.

(2) Had the break occurred in the bomb-bay line, by opening the bomb-bay doors I might have closed this line and rendered the system operative. In this instance it did not happen to be the case.

(3) Before using the auxiliary hand pump, I tried to snap the wheels down through violent use of the elevator. I did this at 110 miles per hour. I believe I would have had a greater chance of success at a higher speed - say 170 or 180 miles per hour.

(4) The turf at Chanute Field was soft, due to a recent rain. This lowed up the roll of the ship considerably and I didn't roll more than half a mile. Had I landed on a hard surface runway I probably would have rolled the entire length and crashed into something. Consequently, if I had it to do over again, I would make sure to land on a turf field.

---oOo---

SOUTH AMERICAN PILOTS VISIT BOLLING FIELD

A group of six airplanes, constituting a "Good Will" flight of the Pan-American Union, arrived at Bolling Field on November 24th, the visiting pilots being on a tour of a number of American cities. The flight consisted of six Taylor "Cubs," piloted by representatives of several South American countries, and wad led by Captain Laborde.

The flight departed from Bolling Field on November 25th.

---oOo---

COMMEMORATION OF KITTY HAWK FLIGHT

In commemoration of the first flight of the Wright Brothers at Kitty Hawk, North Carolina, December 17, 1903, all Army Air Corps stations have been directed to place all available airplanes in the air on December 17th at the hour of the first flight, weather permitting.

---oOo---

HIGH TENSION IGNITION CABLE

The Air Corps Materiel Division at Wright Field, Dayton, Ohio, announces that, as a result of considerable research, a new type of high tension ignition cable has been developed which is at present undergoing service test. The new type of cable has been reduced in outside diameter from the present standard of .285 inch to .200 inch. This was accomplished by utilizing a steel stranded conductor and a greatly improved rubber insulating compound. The new type of cable has the advantage of requiring a smaller shielding manifold, with a consequent saving in weight and space.

Laboratory tests of the new type of cable have conclusively shewn that it meets all the performance requirements of the present ignition cable specifications. In addition, it is definitely superior to the standard cable which was procured approximately two years ago.

---oOo---

Nearly every Army pilot has had one or more unusual experiences in flying which taught him valuable lessons. You can help others by telling about them in the News Letter.

V-7578, A.C.

WHAT TO DO WHEN THINGS GO WRONG
By the Mitchel Field Correspondent

The following was submitted as a suggestion in accordance with a recent order emanating from GHQ, which requires Check Lists for co-pilots and passengers in all types of airplanes. The O.I.C. was attempting to make up such a Check List and one of the enlisted men of the O-46 flight presented him with this:

INSTRUCTIONS TO ALL PASSENGERS IN O-46 AIRPLANES

1. In case of engine failure or other minor trouble such as loss of wing or wings, loss of propeller, fire, etc., the following procedure will be carried out:

a. Remove all loose radio equipment and tools.
b. Ask Pilot for Form 1 and fill out same.
c. Send radiogram to Corps Area Headquarters requesting permission to make emergency parachute jump.
d. Check altitude and position, being sure to include this information in the above mentioned radiogram.
e. Make list of best telephone numbers in the vicinity.
f. Notify Pilot that you are ready to jump.
g. JUMP.

2. After leaving ship proceed as follows:

a. Count ten (it may be necessary for some passengers to carry slide rule to accomplish this. If necessary it will be included in the bundle of spare radio parts and tools carried).
b. Pull the rip cord. This is quite essential.
c. The usual procedure here is for the parachute to open.
d. If step b or c, or both, are omitted, immediately upon landing the passenger will proceed to the Post Operations Office, secure and fill in Form No. 1311 (Request for Sympathy) and mail same to the Chief of Chaplains, U.S. Army, Washington, D.C. This will be accompanied by an Unsatisfactory Report on the parachute used.
e. The Form 1, radio, spare parts, tools, etc., will always be carried by the passenger on his jump.
f. In some cases the Booklet "How to Swim in Three Easy Lessons" will be found very helpful.
g. In other cases, the passenger has found that the Booklet "How to Fly in Nine Easy Lessons" is sometimes of value, but it has been found by the Trial and Error Method that the usual passenger never gets beyond Lesson Three before the ship comes in somewhat violent contact with the ground or some other obstacle which sometimes has disastrous results.

5. One of the most important things to remember is that when passenger, having carried out the above instructions, proceeds to his barracks or place of residence and he observes a group of his friends he will practice repeating "Well, boys, we were flying about ....." This practice is very necessary, as after the first week or two after his jump the story will be no longer than that, or the Medical Officer will ask him why he is talking to himself.

---oOo---

NAVIGATION TRAINING AT LANGLEY FIELD

Continuing the program of training co-pilots and bombers of B-17 crews in celestial and dead reckoning navigation, Captain A.Y. Smith, Air Corps, held a class on November 18th, with the following officers in attendance: Lieuts. T.L. Mosley, I.R. Selby, J.B. Stanley, R.S. Freeman, C.J. Cochrane and J.B. Montgomery.

Two hours were devoted to a careful explanation of the Ageton method of solving triangles. Following this lecture, a problem was worked using assumed figures for the time and sextant readings. After all of the men become sufficiently proficient to aid the regular navigator in his celestial work, Captain Smith expects to take up dead reckoning navigation with a view to training his pupils so that on long flights they will be able to relieve the regular navigator.

---oOo---

COOPERATION WITH CHEMICAL WARFARE SCHOOL

The 37th Attack Squadron, Langley Field, Va., flew a cooperative mission with the Chemical Warfare School at Edgewood Arsenal, Md., on November 18th. The operations consisted of two main chemical missions. The first was a smoke screen laid by five airplanes. The second mission consisted of an attack by all five airplanes on silhouette targets with four forward machine guns, followed by a gas attack of tear gas and dye on the students who were marching along a road.

---oOo---

With 44 world records to the credit of its pilots, Italy, as of July 1, 1937, held most of the official aviation marks in the categories recognized by the Federation Aeronautique Internationale. The United States was credited with 39 major records, France with 22, Russia with 15, Great Britain with four, and Germany, Japan, Czechoslovakia and Poland with one world mark each.

HISTORY OF THE SECOND BOMBARDMENT GROUP

The Second Bombardment Group, the home station of which is at Langley Field, Va., was originally the First Day Bombardment Group, First Pursuit Wing, when it was organized at Moulon, France, September 10, 1918. The Group then consisted of the 96th, 20th and 11th Day Bombardment Squadrons, the 464th Construction Squadron and the 12th Photo Section. Of the Bombardment Squadrons, the 96th was the veteran organization, having been engaged in active operations on the front since May, 1918. It was the pioneer bombing squadron of the American Air Service, and its history is crowded with brave and thrilling exploits. Organized at Kelly Field, Texas, August 20, 1917, this Squadron had no definite idea of what lay in store for it, as was true of all other infant organizations of the rapidly growing army. It was not known whether it would be among the fortunate units to be sent across the water for immediate service in the field or whether it would be retained for equally important but less stirring duties at some home flying field.

On October 9, 1918, the Squadron was ordered to Mineola, L.I., New York, to be outfitted for overseas service. Sailing from New York on October 27th, it arrived at Liverpool, England, November 10th; moved to Southampton, and shortly afterwards departed for France, with station at the 7th Aviation Instruction Center, Clermont-Ferrand, Puy-de-Dome. Here the organization of the Squadron was completed and the mechanics given a course of training on the Breguet Day Bombardment plane and on the Renault motor at the nearby Michelin factory where the planes were made. This training later proved invaluable when the Squadron was sent to the front. On May 18th, the Squadron was sent to Amanty Field, near Gondrecourt, and became an established bombing unit in active service against the enemy. The flying equipment consisted of ten old instruction planes, type Breguet 14 B 2, with 300 horsepower, Type 12 F.E.V. Renault motors, which had been transferred from Clermont-Ferrand.

The first important bombing mission took place late in the afternoon of June 12th, when a flight of eight planes took off to bomb Dommary-Baroncour. The Squadron was practically without precedent for guidance, as it was isolated from other flying squadrons and had only two pilots on the rolls who had ever crossed the lines. The Squadron's baptism of enemy aircraft fire was received over Etain, and the "Archies" were particularly active and accurate over the objective. Nevertheless, good hits were scored by the entire flight. The formation was attacked on the return flight by two enemy scouts and one biplace fighter. The pilots closed and held a tight formation, however, and the observers were able to beat off the attack. One place received two explosive bullets in the engine, but was able to reach the airdrome. Three planes were forced down with empty tanks, but all landed safely. Such was the unqualified success of the First American Bombing Raid.

Raids were scheduled daily, when weather permitted, until the middle of July, when the Squadron, through losses over the lines, was reduced to two planes. It was several weeks before new equipment and personnel arrived. In all, the Squadron was engaged in operations in the Toul Sector, at St. Mihiel, and the Meuse-Argonne, first and second offensives. It made nearly fifty bombing raids into enemy territory, destroying a great amount of property and gathering much valuable information. Participating in 19 combats, it was officially credited with the destruction of 14 enemy airplanes. The Squadron suffered 41 casualties, consisting of 12 killed, 12 wounded, 15 taken prisoners and 2 missing. During the month of August, the 96th operated continuously, with one to three raids a day, whenever it was at all possible to get over the lines, with only a few minor casualties. In September, however, the casualties it suffered were exceeded by no other squadron at the front. The last raid of the Squadron proved to be the hottest of its many encounters with enemy airplanes. A formation of five planes bombing Montmedy, after making some wonderful hits, was attacked by 15 enemy airplanes in a battle which lasted 20 minutes. Due to the expert leadership of the flight commander and the skillful flying of the remainder of the formation, the enemy was not once afforded a steady target. Two enemy planes were brought down, one in flames. One of our observers was shot through both hands and one plane was shot up so badly that it was forced to land at a French airdrome.

On September 18, 1918, the 166th Bombardment Squadron joined the Group, completing its organization. Little attention had been paid to American Bombardment planes up to this time. But immediately upon the advent of the First Day Bombardment Group, the Germans moved several of their crack circuses down to oppose them. That the heavy odds of the enemy were met successfully is recorded in the following citations accorded the Group:

"COMMENDATION OF WORK OF FIRST DAY BOMBARDMENT GROUP.
Headquarters First Army, Air Service
September 19, 1918.

"1. The work of the 1st Day Bombardment Group during the battle of St. Mihiel, and in the operations after it, has been such as to bring out the praise and appreciation of all the troops of the Allied Service participating in the operations. This Group, under most difficult conditions, with new equipment, pilots and observers, who had recently come up on the front, has shown a devotion to duty and initiative which has not been exceeded by any troops on the front.

"2. The work of the 1st Bombardment Group has materially aided in hindering hostile concentration troops, troop movement along the roads, and in sweeping the enemy back, thereby making lighter the work of our own Pursuit Aviation along the immediate front.

"3. I desire that all members of the Group be informed of the high regard in which their work is held throughout the Army.

(s) Wm. Mitchell,
Colonel, A.S., First
Army."

TELEGRAM

"HEADQUARTERS A.E.F.
Chief of Air Service

"First Day Bombardment Group -

"Excellent work done by the officers and men of your Group during the recent offensive deserves and has received hearty commendation. Congratulations to you and your command on the record you have made for yourselves and for the Air Service. It is good to know that we can rely upon you to keep up this fine work which counts for so much in bringing about the results desired.

(s) General Patrick."

The 20th Day Bombardment Squadron, which had joined the 96th at Amanty on September 7th, as a step in the process of organizing the Bombardment Group, started operations September 12th by conducting several Army reconnaissance missions with the opening of the St. Mihiel offensive. In was on this day that the Squadron suffered its first casualty. The 20th was the first squadron of American built planes to drop bombs over the enemy lines. On September 14th, formations from the 20th, 11th and 96th Squadrons conducted raids over the enemy lines, the first effort of the Group. The following day, however, proved most disastrous to the Group. A formation of six planes from the 20th Squadron left to bomb the railroad yards at Conflans. Due to the excessive strain put upon the planes on the first day of the offensive, it was necessary for all save the leader to turn back before the lines were reached. Although knowing the almost insuperable odds of a single Bombing plane crossing the lines, a try was made for the objective. Four Fokkers were met and driven off in the dash for the railroad center. The bombs were dropped on the objective. Three more planes were met and driven off on the return to our lines, and the lone plane, riddled with enemy bullets, finally reached its field. On that same day, out of a formation of six planes from the 11th Squadron, only one staggered back to its home field and it was in a riddled condition.

Such is the story of the Group for each of the squadrons up to the end of operations. On October 18th, the 166th Squadron, now the 49th Squadron, started on its initial raid on Buzancy with 13 planes. Eight planes reached the objective and dropped 800 kilos of bombs. The formation was attacked by 20 Fokkers and Pfalz, and in the course of the combat two of its planes were crippled but landed behind our lines. One enemy plane was destroyed. In less than one month of operation, the 166th had a record of conducting 12 successful raids, dropping 10,200 kilos of bombs, destroying six enemy airplanes with a loss of one observer killed, two observers and one pilot wounded and not one plane lost in enemy territory. After the Armistice, the Squadron was moved with the Army of Occupation to Germany, with station at Treves, where it remained until its return to the United States in April, 1919.

After the Armistice, the remainder of the Group received notice of disbandment on December 12, 1918. It arrived in the United States in February, 1919, and was demobilized at Mitchel Field, N.Y. The Group was reorganized at Ellington Field, Texas, in August, 1919, with the 11th, 96th and 20th Squadrons, the 464th Construction Squadron and the 2nd Photo Section. The 166th Squadron was stationed at this time at Aberdeen Proving Ground, Md. After its reorganization, the Group was distributed along various points on the Mexican border, and in the fall of 1920 returned to Kelly Field, where it was joined by the 166th Squadron. The designation of the Group was changed from the 1st Day Bombardment Group to the 2nd Group (Bombardment) in April, 1921, and in January, 1923, it was redesignated the 2nd Bombardment Group. In the summer of 1921, flights of each of the Bombardment squadrons were temporarily transferred to Langley Field, Va., to participate in the bombing of the German battleships off the Virginia Capes. Returning to Kelly Field in the latter part of September, they resumed their duties until the entire Group was transferred to Langley Field in June, 1922. One month later, the 49th Squadron, formerly the 166th, was detached from the Group and stationed at Aberdeen, Maryland.

Since 1922, the Group has participated in the bombing of scrapped American battleships, the Pee Dee River bridge in

(Continued on page 13).

NEW TYPE OF AIRPLANE FOR HAMILTON FIELD

Hamilton Field, San Rafael, Calif., recently received a new type of airplane on an Army order designed to further increase the efficiency of the GHQ Air Force.

Ever since the advent of the first long-range Bombardment type airplane, the Army has been pinched by its need for a general utility plane to accompany its flying armada, fulfilling such requirements as navigability over land or sea in any weather conditions, with sufficient range, speed and payload to carry the necessities for the servicing of the strictly military airplanes.

This new amphibian - now designated by the Army as the Y1OA-8 - is eminently adapted to fill this need. Built by Sikorsky, it is very similar to the commercial "Baby Clippers" - the Sikorsky S43 - which is now in extensive use by Pan American Airways and other lines in Hawaii, the Philippines, and South America. It is of all-metal construction, but with fabric covered control surfaces, painted in the familiar Army blue and yellow. Its two 800 horsepower Pratt & Whitney "Hornet" geared radial air-cooled engines cleave the air in excess of 190 miles per hour. This airplane carries eight passengers, or a corresponding amount of freight, and a crew of three - pilot, co-pilot and a radio operator who uses the very latest type of aeronautical radio equipment. It is capable of remaining aloft for eight hours. In spite of its great size, this airplane held at one time the world's altitude record for amphibians.

To ease the labor of maintenance and flying, this new amphibian carries innumerable labor-saving improvements, including automatic valve lubrication, automatic mixture control, and complete facilities for the comfort of the crew and passengers so that they may remain in the air for lengthy periods. To obtain the utmost efficiency from its powerful engines, constant speed propellers are included in its design.

This airplane is the first of an order of five to be delivered to the Army. Preparatory to being placed in actual service for navigation training work, as a rescue ship for fighting airplanes forced down at sea, and for general utility work with the new Douglas B-18 Bombers, it is undergoing a series of ground inspections and tests at Hamilton Field, and will shortly become another cog in the GHQ Air Force defense machine.

---oOo---

Effective December 1, 1937, the following named Air Corps officers were given temporary promotions to the grades indicated: Lieut. Colonel Roy M. Jones to Colonel, Major Ira C. Eaker to Lieut. Colonel, and Captain Pardoe Martin to Major.

NEW CLASS AT SCHOOL OF AVIATION MEDICINE

Another routine course of instruction to qualify medical officers for duty as Flight Surgeons was commenced at the School of Aviation Medicine, Randolph Field, Texas, on December 1, 1937, and will continue for four months. Student officers enrolled for this course are - Captains Joseph A. Baird, Langley Field, Va.; Jay F. Gamel, Randolph Field, Tex.; Reinhardt L. Schmidtke, Fort Sill, Okla.; William D. Willis, Fort Sam Houston, Texas; 1st Lieuts. William C. Harrison, Fort Worden, Wash., and Edward Sigerfoos, Fort Sam Houston, Texas, all members of the Medical Corps, Regular Army, and Major Julio Cesar Aguilera, Medical Corps, Mexican Army, Mexico City.

Two basic courses are conducted annually, starting July 15th and December 1st of each calendar year.

In addition to the resident courses, the School conducts throughout the year extension (correspondence) courses of considerable magnitude. The School of Aviation Medicine is an activity of the Air Corps Training Center.

---oOo---

The Second Bombardment Group
(Continued from Page 12).

1927; the mass formation flight to California in 41 hours in 1928; the Air Corps Maneuvers at Dayton, Ohio, in 1929; West Coast Maneuvers in 1930 and 1933; East Coast Maneuvers in 1931; the Air Mail in 1934, and the Second Army Maneuvers in 1936.

---oOo---

REAL WINTER AT SELFRIDGE FIELD

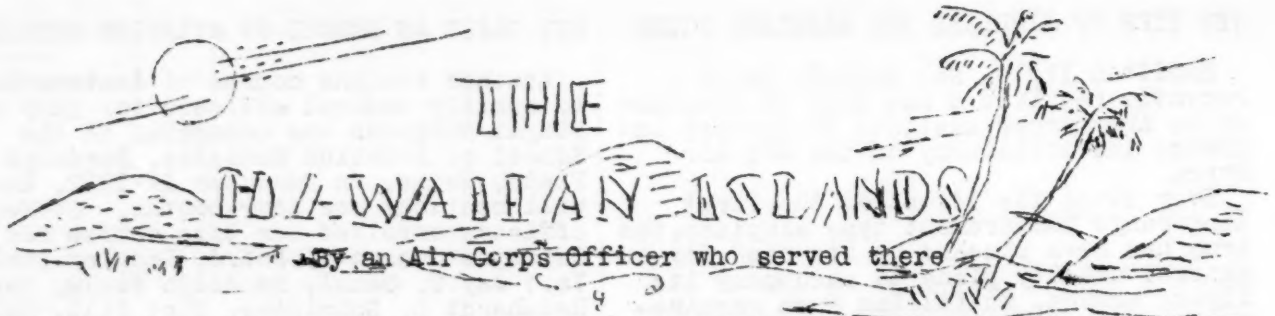
Calling all C.W.E.T. Pilots. It is presumed the Selfridge Field Correspondent has reference to the Cold Weather Equipment Test, for he goes on to say:

"If you birds who were hanging around here last February in the hope (?) of encountering some honest winter weather will drop up this way now, I think we've got something here.... For nearly a week the mercury has been hanging between six and fifteen Fahrenheit, and the field is covered with enough ice to gladden the heart of a polar bear.

"You may remember that the Cold Weather Equipment Test Group arrived here at Selfridge Field last February 2nd, and after waiting a month for some sign of winter, they got out their straw hats and went home mad.... Fifteen minutes after the last ship departed.... it snowed. (Honest it did)."

---oOo---

We are glad to hear from Selfridge Field again, and it is hoped to hear from this northern air base regularly from now on.



THE HAWAIIAN ISLANDS

By an Air Corps Officer who served there

A few months after our arrival in the Hawaiian Territory, we were delighted to receive information that we were included among the personnel to make a flight to Kauai (pronounced "cow-eye"). This is the most northwesterly of the eight islands in the Hawaiian Group and is situated approximately one hundred miles from Oahu, with no intervening land. Owing to its relative non-importance from a military standpoint, comparatively few flights of military aircraft are sent to this Island.

From Luke Field we crossed the Island of Oahu, over Pearl Harbor, past Wheeler Field and Schofield Barracks and Kaena Point, the northwestern tip of Oahu, which extends to a needle-like submerged point, distinctly visible from the air on account of the wonderfully clear water. Our trip from Luke Field carried us between the two mountain ranges of Oahu, the densely wooded Koolau Range on the windward side and the more or less barren Waianae Range on the "Kona" or leeward side. We were impressed by the natural bulwarks presented by these two towering walls which so obviously simplify any plans for the military defense of this important island.

Upon arriving at Kauai, we proceeded to circle the island. The first scenes which appeared were rather disappointing in that they duplicated those to which we had become accustomed in Oahu, but we were surprised and delighted upon viewing the terrain on the western side. The famous rock cliffs of Northwestern Kauai, never so perfectly seen as from the air, are sufficiently artistic to constitute a full payment for the efforts expended in making the flight, and we still wonder how nature contrived to carve the solid rock as deeply as it has without the aid of waterfalls.

After leaving the rock cliffs and continuing in a southwesterly direction, we noticed a large sandy area, which we later learned constitutes the "barking sands" made famous by the intrepid Captain Kingsford-Smith, and which he used as a point of departure from the Hawaiian Islands on his universally acclaimed trip to Australia. We have been told that one has a peculiar sensation when he first walks on these sands and hears the canine-like yelps which occur at each step.

Glancing out to sea we could discern the outline of nearby "Niihau," a small island inhabited by about twenty persons.

From the "barking sands" we headed inland and crossed Waimea Canyon. We had to rub our eyes and pinch ourselves to make sure we were not over the Grand Canyon of the Colorado in Arizona, so striking is the similarity. Actually the Waimea Canyon is shorter, shallower and narrower than its illustrious counterpart, but the formations and proportions of the two are peculiarly alike.

The small landing field at Hanapepe afforded us a harbor, and the generosity and cordiality of the white inhabitants of Kauai are still remembered as one of the high lights of our Hawaiian sojourn.

Not long after our trip to Kauai, we were again fortunate to be included in a flight to the "big island." This flight took us over or near all of the remaining islands of the group.

After leaving Diamond Head, we pointed our planes toward Molokai, thirty miles away. Upon approaching the shore, the course was altered in such manner as to skirt the southwestern side of the island. During this portion of the flight, we glanced occasionally to our right to obtain an idea of the terrain of the Island of "Lanai," the "Pineapple Kingdom" of the Dole Company. The northwestern plateau of "Molokai" is also extensively devoted to the raising of this fruit, and the broad acres of this island deliver their product to the Libby Company. The southeastern end of Molokai, which is a slender island, is quite mountainous, and the extreme eastern portion is very beautiful, although that sight was denied us on this flight.

A short water "hop" brought us to Maui (Mow-ē), the "valley isle." The extreme northwestern slopes, which we first approached, presented the familiar patterns of the pineapple fields, although the areas devoted to this form of agriculture are quite limited, due to the sudden rise of the terrain into the formation of the first of a series of the most beautiful green hills, separated by valleys of similar verdure, which it has ever been our fortune to observe. These hills are very precipitous, and their height of some two thousand feet entitles them to the more dignified name of mountains, but compared with the giants viewed during the remainder of the flight the impression

left us of these slopes, without detracting from the beauty of the recollection, is that they are large hills.

The last hill terminates as suddenly as the first appeared, and the long, fairly level, valley portion of Central Maui passed to our left. On our right lay the low, uninhabited and barren island of "Kahoolawe." (We could give you the official pronounciation of this name, but everyone who has been to Hawaii has his or her own ideas, and we do not desire their ridicule, even though we are right). Although we characterize this island as barren, due to lack of any considerable vegetation, the redness of the soil indicates that its nature is similar to that devoted to the culture of pineapples on the other islands. But poor little Kahoolawe lies "Kona" of the towering crater of "Haleakala" on the southeastern end of Maui and, therefore, is cheated of the majority of rainfall.

Mt. Haleakala has an irregular crest whose summit is approximately ten thousand feet above the sea, to the edge of which its lower slopes extend in three directions. Probably the size of this unquestionable "mountain" is responsible for our belittling conception of the proper term for the hills at the other end of the "valley isle."

The entire southeastern tip of Maui has been constituted into a National Park, partially due, no doubt, to the fact that the contour gradient is so great as to render farming impracticable. To the tourist who takes the trouble to ascend to the summit of the mountain, a crater of tremendous depth appears, to the floor of which a zigzag footpath descends. Although this trip was not essayed by us, we have resolved that it will be made at some time during our next tour in the territory.

It is the crater of Haleakala itself that harbors the only known living specimens of the "Silver Sword," a plant similar to the "Spanish Dagger," or "Bayonet" cactus, but whose foliage is resplendently brilliant and whitish silver in color. Referring back to an earlier article in the News Letter, in which the origin of all plant life in the Hawaiian Islands was said to be non-indigenous, the phenomenon of this plant must be due entirely to environment.

The stretch of water over which we flew, extending from the northwestern end of Molokai to the southeastern tip of Maui, and lying between these islands and those of Lanai and Kahoolawe, is named

For some time before we reached Mt. Haleakala we had stolen glimpses of the "big island" directly ahead. A 30-mile stretch of extremely rough water, thoroughly infested with a particularly lively variety of sharks, separates Maui from Upolu Point, the closest tip of "Hawaii." To our delight, we followed the leader in single file to a landing on a small field maintained by the Army on this point.

Our craft were not the modern, sleek, metal speedsters, but rather the old Martin "NBS-1's," over the passing of which many old time "bombardiers" still raise a few figurative tears. It is believed that the last of the NBS-1's were those we flew in Hawaii, and sad was the day when good old "66," the "sweetest" of all, was burned on the junk pile - a most inappropriate ending for a dependable old friend - but sadder still the day when number "50," the last of its type, met a similar fate. At any rate, we were ready for a rest and not at all disappointed to learn that we were to spend the night at Upolu Point.

The next morning we were up bright and early, taking off as soon as possible for the flight around the "big island." Since the distance is in the neighborhood of four hundred miles, only the blase pilots of present-day airplanes may well wonder at the spirit of adventure attending this trip, either forgetting or never having known the esprit de corps required when we claimed a cruising speed of from ninety to one hundred miles per hour for our trusted eighty mile planes.

The flight itself was extremely interesting from the scenic point of view, but even more valuable to each of us as a part of our military education, especially from the Air Corps point of view. Unfortunately, the military knowledge gained cannot properly be published in the News Letter.

The Island was circled to the left, taking us by the Kohala Mountains, about 5,000 feet in height; Mt. Hualalai, an old crater of 8,000 feet; the dense, tropical foliage of the "Kona" coast, where Hawaiian coffee is raised; past mighty Mauna Loa; over the "Kona" coast lava flows, one atop the other, each varying in color from the other; around South Cape; across the southeastern tip of the Island and the "Volcano Region," including Kilauea Crater, with its constant steam; across the Kau desert, where a forced landing could not be made with any hope of salvaging any part of a plane and even a parachute jump would be exceedingly hazardous; skipping the "Puna Coast" around whose scenery was laid the stage production "The Bird of Paradise" of years ago; over the City of Hilo; its airport, which we could not use for landing our Martins due to lack of brakes; on past the cane fields; past lofty Mauna Kea, the highest peak of all; past the unusual geological formations comprising the "Hamakua Coast;" and so

(Continued on Page 17).

OBITUARIES

Within the past few weeks the Air Corps lost several of its personnel through airplane accidents and one through natural causes, thus again confirming that oft repeated adage to the effect that misfortunes never come singly.

Major Alfred E. Waller, of Langley Field, Va., lost his life on December 11th, when the plane he was piloting caught fire in flight and crashed when he attempted to make a landing. He was removed from the burning wreckage before his clothing caught fire. Sergeant John Johnson, who accompanied him on the ill-fated flight, suffered contusion and minor injuries when he was thrown clear of the airplane.

Major Odas Moon died on November 19th at the Hotel Chamberlain, Old Point Comfort, Va. He was awaiting retirement from active service, effective December 31st. Major Moon had been in ill health for some time.

Second Lieut. Edward Lawrence Parsons Burke was killed near Kelly Field, Texas, on December 9th while engaged in a weather flight.

Second Lieut. Charles William Field, Air Reserve, and his passenger, Private George W. Bolton, Jr., lost their lives on December 1st, about 2½ miles south east of Avery, Texas, when the A-17A Attack plane piloted by Lieut. Field went into a tail spin and crashed.

Major Waller was born at Morganfield, Ky., February 20, 1894. He attended Vanderbilt University for three years. Following his enlistment on December 8, 1917, in the Aviation Section, Signal Corps, he graduated from the ground course at the School of Military Aeronautics, Austin, Texas, February 23, 1918. After several weeks' duty at the Aviation Concentration Camp at Camp Dick, Dallas, Texas, he was ordered to Park Field, Tenn., for flying training. Passing his tests as a Reserve Military Aviator, he was commissioned a second lieutenant in the Aviation Section, Signal Corps, on May 14, 1918.

Following attendance at the Armament School at Wilbur Wright Field, Fai field, Ohio, from July 3 to 24, 1918, he was transferred to Gerstner Field, Lake Charles, La., for advanced training as a Pursuit pilot.

Due to the destruction of Gerstner Field as the result of a hurricane, Major Waller was transferred to Rockwell Field, Coronado, Calif., to continue his Pursuit training, completing same on October 26, 1918. He remained at Rockwell Field, serving as Supply Officer, until August 14, 1919, when he was transferred to March Field, Riverside, Calif., where he served as a flying instructor among other duties.

Following his appointment as a second lieutenant in the Air Service, Regular Army, July 1, 1920, he was transferred to Mather Field, Sacramento, Calif., where he served as Post Exchange Officer. In June, 1922, he was assigned to duty at Crissy Field, Presidio of San Francisco, Calif., and in the following September he was assigned to foreign service with the 3rd Pursuit Squadron at Clark Field, Philippine Islands.

From August, 1924, to May, 1927, Major Waller was stationed at the Air Corps Primary Flying School at Brooks Field, San Antonio, Texas, serving at various times as Commanding Officer of the 52nd School Squadron; Engineering Officer, 51st Squadron; Flying Instructor and Director of Flying Instruction.

After attending the Air Corps Tactical School at Maxwell Field, Ala., from August, 1931, to June, 1932, Major Waller, upon graduation, was assigned to Langley Field, Va., serving as Commanding Officer of the 35th Pursuit Squadron and later as Operations Officer of the 8th Pursuit Group.

In the operation of the Air Mail by the Army Air Corps, Major Waller was placed in charge of Section II of the Eastern Zone, comprising the route from Chicago, Ill., to Jacksonville, Fla., and the Richmond, Va., to New Orleans, La., Section of the Newark, N.J. to New Orleans route, with headquarters at Candler Field, Atlanta, Ga.

Major Waller performed a varied assortment of duties at Langley Field, but during most of his over four year tour at this field he commanded the 35th Pursuit Squadron. For brief periods he served as Supply Officer of the Squadron; as Operations Officer of the 8th Pursuit Group; as Commanding Officer of the 33rd Pursuit Squadron and as Executive and Operations Officer of the Second Wing.

After graduating from the one-year course at the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1937, Major Waller returned to Langley Field for duty. His total flying time exceeded 3600 hours.

Lieut. Burke, a native of the State of Montana, where he was born October 25, 1912, and whose home was in Helena, graduated from the U.S. Military Academy, West Point, N.Y., June 12, 1936, when he was commissioned a second lieutenant and assigned to the Infantry. Ordered, at his own request, to the Air Corps Training Center for flying training, he graduated from the Primary Flying School at Randolph Field, Texas, June 23, 1937, and from the Advanced Flying School, Kelly Field, Texas, on October 6, 1937, on which date he was rated as "Airplane Pilot." He was slated for duty in the Philippines. His untimely death shortly after finishing his flying training and when he was on the threshold of his new career in the Air Corps, one which from all indications he was looking forward to with a great deal of interest and enthusiasm, is sad to contemplate.

Like Lieut. Burke, Lieut. Charles William Field graduated from the Advanced Flying School at Kelly Field, Texas, on October 6, 1937. He was commissioned on that date as a second lieutenant in the Air Reserve and assigned to active duty with the 13th Attack Squadron at Barksdale Field, La. Lieut. Field was 23 years of age and his home was at Rocky Face, Ga.

Private Bolton, who enlisted in the Air Corps on February 3, 1937, and whose home was at Beinville, La., was born on September 10,

1918. He was assigned to duty at Barksdale Field, La., with Base Headquarters and 6th Air Base Squadron.

Major Moon, a World War veteran, who was 45 years of age, enlisted in the Aviation Section, Signal Corps, in October, 1917. A sketch of his military career was published in the issue of the News Letter of October 1, 1937, in connection with the announcement of his retirement from active service. Major Moon was particularly well versed in Bombardment Aviation.

The Air Corps deplores greatly the loss of these men who died in the service of their country and extends its deepest sympathies to the bereaved relatives and friends.

---oOo---

THE HAWAIIAN ISLANDS (Continued from Page 15).

back to Upolu Point and a well earned and much needed rest.

The return flight to Luke Field was made the next day, following the same route, in reverse order, as that employed on the outward journey. We arrived, dirty and sun-burned, but possessing sufficient information to entertain our families and friends for several days.

There is so much interesting detail concerning the Island of Hawaii, which was but lightly mentioned in this article, that another article will follow, devoted more or less exclusively to an expository treatment of some of the outstanding points.

---oOo---

RETIREMENT OF MASTER SERGEANT DONOHOE

Special Orders of the War Department recently issued announced the retirement from active service on November 30, 1937, of Master Sergeant Michael J. Donohoe, 8th Attack Squadron, Barksdale Field, La.

A few Air Corps officers now in the service, but many middle-aged men in civil life, upon hearing this announcement, would harken back to World War days when they were cadets attending the Ground Officers Training School at Kelly Field, Texas, and their memories would drift to that colorful figure of the Ground School Drillmaster, Sergeant Michael J. Donohoe, who caused them many an anxious moment during drill periods, whose ready wit and humorous sallies made them forget for a time the hard grind they were undergoing in order to secure that much coveted commission in the Aviation Section, Signal Corps, and whose kindly interest in their welfare gained for him their admiration and respect.

New classes for the G.O.T.S. were formed each week, the length of the course being some ten weeks. The "old-timers" - those who had had an opportunity to become pretty well acquainted with Sergeant Donohoe and to learn that his "hard-boiled" characteristics were limited to the drill field only, took keen delight in telling the new arrivals in considerable detail the extremely tough time in store for them with the Drillmaster.

Just a few words with the kindly Sergeant, without even knowing his name, removed all doubt regarding his native land, for if there was anyone who more adequately fitted one's conception of a typical representative of the Emerald Isle, the writer has not known such.

It was customary for each class of the Ground School at graduation time to hold a banquet at one of the San Antonio hotels, and Sergeant Donohoe was invariably the guest of honor. Also, he was remembered by each class, as evidenced by the many mementoes at his quarters at Kelly Field.

After the first few weeks, when the rookie students had gotten the hang of marching straight and executing the various formations, the Sergeant introduced a new figure in the set-up, an assistant instructor, equipped with a notebook and pencil. Said assistant instructor's principal duty was to jot down names. That dreaded notebook became the bane of every cadet's existence, but not until graduation time did it leak out that that the little book was a fake. Be that as it may, its moral effect was real, and when a cadet's name was called out for record therein he just had something more to worry about in connection with his chances of obtaining a commission.

In the closing days of the course, individual cadets were singled out to drill the company for brief periods. Here is an example of just one of the many humorous incidents which occurred on the drill field. One temporary commander of the company got along fine until he followed the maneuver of "To the Rear" with the command "Squads Right."

"Halt the coompany! Halt the coompany!" shouted Sgt. Donohoe, running up to the flustered cadet. "And what's yur name? Goode, is it? Well, Goode, that was very bad!"

Master Sergeant Donohoe was born in Galway, Ireland, May 18, 1884. He attended public school in his native city, and later was a teacher. Following his arrival in the United States, he enlisted in the Marine Corps, serving a four-year period. He then enlisted in the Army, serving with Company L, 28th Infantry, in the grades of Private, Corporal and Sergeant for over four years before joining the 112th Aero Squadron at Kelly Field.

Following the suspension of the Ground Officers Training School at Kelly Field, he served for a brief period as drillmaster at the School of Military Aeronautics, Atlanta, Ga., and was then transferred to Garden City, L.I., New York. In September, 1919, he was transferred to Carlstrom Field, Arcadia, Fla. For several months he was on detached service at McCook Field, Dayton, Ohio. He next completed a course of instruction in engine mechanics at the Air Service Mechanics School at Kelly Field. He received appointment as Master Sergeant on July 1, 1920. Sergeant Donohoe continued duty with the Primary Flying School at Carlstrom Field and later at Brooks Field, to which this school was subsequently moved. In June, 1925, he was ordered to the Hawaiian Department, and after a 3-year tour there, he was stationed at Langley Field a similar period, and from January, 1931, until his retirement he served with the 3rd Attack Group.